UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,639	08/17/2001	Neal G. Skinner	2000IP000227	6326

20558 7590 05/06/2004

KONNEKER & SMITH P. C.
660 NORTH CENTRAL EXPRESSWAY
SUITE 230
PLANO, TX 75074

EXAMINER	
SEDIGHIAN, REZA	

ART UNIT	PAPER NUMBER
2633	13

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 13

Application Number: 09/932,639
Filing Date: October 03, 2000
Appellant(s): SKINNER NEAL G.

Neal. G. Skinner
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/17/04.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Summary of Invention

The summary of invention contained in the brief is correct.

(5) Issues

The appellant's statement of the issues in the brief is correct.

(6) Grouping of Claims

Appellant's brief includes a statement that claims 25, 30, 40, 45, 47-48, 52-53, and 56-58 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(7) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Prior Art of Record

4,495,421 ✓	Endo et al.	1-1985 ✓
4,928,319 ✓	Pitt et al.	5-1990 ✓
4,941,201 ✓	Davis	7-1990 ✓
5,193,201 ✓	Tymes	3-1993 ✓

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 25 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo et al. (US patent No: 4,495,421).

Regarding claims 25 and 30, Endo teaches an electrical power distribution system (fig. 4), comprising: a fiber optic line (40, fig. 4); multiple power consuming devices (2-1, 2-2, 2-3, fig. 4); multiple control modules (30-1, 30-2, 30-, fig. 4) interconnected between the fiber optic line (40, fig. 4) and the power consuming devices (2-1, 2-2, 2-3, fig. 4) and each of the control modules being operative to select the respective power consuming device for supplying electrical power thereto (for example switch 30-1 is connected to electrical device 2-1 to turn the device on and off) in response to one of multiple optical wavelength bands transmitted through the fiber optic line (for example switch 30-1 receives wavelength $\lambda 1$), each of the optical wavelength band ($\lambda 1$, $\lambda 2$, $\lambda 3$, fig. 4) causing one of the control modules to select the respective power consuming device for supplying electrical power (each wavelength band is received by respective switch s 30) and the wavelength band transmitted singly through the fiber line

(optical signals of wavelengths λ1, λ2, λ3 are multiplexed and transmitted singly through the fiber 40). As to claim 30, Endo further teaches an optical coupler (11, fig. 4) that is connected to the fiber line (optical coupler 11 is connected to fiber line 40 shown in fig. 4) and that receives separate optical wavelength bands (optical coupler 11 receives separate wavelengths λ1, λ2, and λ3 from respective fiber lines 40) from multiple tunable lasers (optical signals of wavelengths λ1, λ2, and λ3 that are transmitted through optical switches 20 and over fiber lines 40 can be generated by respective tunable lasers).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pitt et al. (US patent No: 4,928,319) in view of Davis (US patent No: 4,941,201).

Regarding claim 19, Pitt discloses a method of providing electrical power to multiple power consuming devices (col. 1, lines 10-37 and figs, 7, 8), comprising the steps of: interconnecting a power consuming device (256, fig. 1) to a fiber optic line (240, fig. 8), so that the power consuming device is selected for operation thereof by transmitting one of multiple optical wavelength bands (col. 6, lines 30-40, note that there are a plurality of laser 232 that each can generate a respective optical signal that are further transmitted over fiber 240) through the fiber optic line (240, fig. 8), wherein each of the transmitted optical wavelength bands causes a

device to be selected (col. 1, lines 52-64, col. 7, lines 32-40). Pitt differs from the claimed invention in that Pitt does not specifically discloses providing electrical power to a multiple of power consuming devices. However, Pitt discloses the method of transmitting power, as discussed above can be used for transmitting power to remote operation of surveillance, communications, control systems, or devices (col. 1, lines 52-64). Pitt further discloses individual detectors have respective electrical outputs which are connected to drive the utilization device (col. 7, lines 32-40). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that an optical signal transmission and electrical power distribution system such as the one of Pitt can transmit power to multiple power consuming devices in order to provide a power supply arrangement that is not susceptible to electro-magnetic interference for powering of electrical devices. Pitt further differs from the claimed invention in that Pitt does not specifically disclose the power consuming devices are data storage devices. Davis teaches a transmission and retrieval system (col. 1, lines 10-15 and fig. 1), wherein data storage devices (22, fig. 1) derive their operating power from the combinational signal transmitted by a data link means (col. 2, lines 35-45, 60-64). Therefore, it would have been obvious to an artisan at the time of invention to incorporate data storage devices such as the ones of Davis for the power consuming or utilization devices in the signal transmission system of Pitt in order to provide utilization devices that can retrieve and store data.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pitt et al. (US patent No: 4,928,319) in view of Tymes (US patent No: 5,193,201).

Regarding claim 20, Pitt discloses a method of providing electrical power to multiple power consuming devices (col. 1, lines 10-37 and figs, 7, 8), comprising the steps of: interconnecting a power consuming device (256, fig. 1) to a fiber optic line (240, fig. 8), so that the power consuming device is selected for operation thereof by transmitting one of multiple optical wavelength bands (col. 6, lines 30-40, note that there are a plurality of laser 232 that each can generate a respective optical signal that are further transmitted over fiber 240) through the fiber optic line (240, fig. 8), wherein each of the transmitted optical wavelength bands causes a device to be selected (col. 1, lines 52-64, col. 7, lines 32-40). Pitt differs from the claimed invention in that Pitt does not specifically discloses providing electrical power to a multiple of power consuming devices. However, Pitt discloses the method of transmitting power, as discussed above can be used for transmitting power to remote operation of surveillance, communications, control systems, or devices (col. 1, lines 52-64). Pitt further discloses individual detectors have respective electrical outputs which are connected to drive the utilization device (col. 7, lines 32-40). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that an optical signal transmission and electrical power distribution system such as the one of Pitt can transmit power to multiple power consuming devices in order to provide a power supply arrangement that is not susceptible to electro-magnetic interference for powering of electrical devices. Pitt further differs from the claimed invention in that Pitt does not specifically disclose the power consuming devices have programmed functions. Tymes teaches a light transmission system (col. 1, lines 5-10 and fig. 1), wherein data processing devices use photodiodes to receive both power and data (col. 1, lines 52-53) and the photodiodes generate electrical voltage to provide power to a microprocessor (col. 1,

lines 54-55). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a data processing device that has a programmed function, or a microprocessor such as the one of Tymes for the power consuming device, or utilization device in the signal transmission system of Pitt in order to provide utilization devices with processing functions.

9. Claims 39-40, 44-45, 47-49, and 52-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (US patent No: 4,495,421).

Regarding claims 39-40, Endo discloses a method of providing electrical power to multiple electronic devices as discussed above in claims 25 and 30. Endo differs from the claimed invention in that Endo does not specifically disclose the electronic devices are data storage devices, or devices with programmed functions. Endo teaches an electrical appliance includes various electric loads such as motors, solenoid, air-conditioning heater, etc (col. 2, lines 31-38). Accordingly, if the electrical appliance is an air-conditioning heater, as it is suggested by Endo, such device can have a data storage device for storing different instruction and commands that can be given to the heater by an operator, or such device can have a processor with programmed functions to provide certain commands and control for operation of such device. Therefore, it would have been obvious to a person of ordinary skill in the art that electrical appliances such as the one disclosed by Endo can have electronic circuitries to store data, or they can be provided with installed programs to perform specific functions.

Regarding claim 44, Endo discloses a control system for selectively supplying electrical power to multiple electrical power consuming devices (2-1, 2-2, 2-3, fig. 4); a fiber optic line (40, fig. 4); multiple control modules (30-1, 30-2, 30-3, fig. 4) that are responsive to respective

optical wavelength bands (λ1, λ2, λ3), multiple opto-electric converters (col. 3, lines 38-40 and 30, 31, fig. 2), as discussed above in claims 25, 30, and 39-40. Endo differs from the claimed invention in that Endo does not disclose the system is used in a well tool for selectively supplying electrical power to multiple electrical power consuming well tools in a subterranean well. However, such limitations are recitation of an intended use of the claimed invention. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Regarding claim 45, Endo discloses a WDM drop (11, fig. 4) interconnected to the fiber line (40, fig. 4

Regarding claim 47, Endo discloses an optical coupler (11, fig. 4) connected to the fiber line (40, fig. 4) and an optical filter (12, fig. 4) interconnected between the coupler (11, fig. 4) and the power consuming device (2, fig. 4).

Regarding claims 48-49, Endo discloses the multiple optical wavelength bands (λ1, λ2, λ3) are transmitted singly or simultaneously through the fiber (optical signals of wavelengths λ1, λ2, λ3 are transmitted singly and simultaneously over the fiber 40).

Regarding claim 52, Endo discloses an optical coupler (11, fig. 4) for receiving separate optical wavelength bands (optical coupler 11 receives separate optical signals of wavelengths λ1, λ2, λ3).

Regarding claim 53, Endo discloses a tunable laser (optical signals of wavelengths λ1, λ2, and λ3 that are transmitted through optical switches 20 and over fiber lines 40 can be generated by respective tunable lasers).

Regarding claims 54-55, Endo discloses opto-electric converters (31, fig. 2) that are connected to a switch (30, figs. 2, 4), wherein the switch is a field effect transistor (col. 3, lines 38-41).

Regarding claims 56, as it is understood in view of above 112 problem, Endo discloses electrical power is supplied to the power consuming devices in an analog form (col. 3, lines 38-45, col. 5, lines 29-31).

Regarding claims 57-58, Endo discloses data storage devices, as discussed above in claims 39-40.

10. Claims 46, 50-51, and 59-61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 11-13 and 27-28 are allowed over prior art of record.

(10) Response to Appellant

With respect to claim 25, Appellant cited the definition of "**singly**" and argued that the optical wavelength bands are transmitted through the fiber optic line singly is not taught by the reference of Endo. However, claim 25 requires "the *multiple* optical wavelength *bands* being transmitted singly through the fiber optic line" (emphasis added). As disclosed by page 3 lines

5-20 and page 6, line 1-6 of the specification, there are two situations that power consuming device or devices can be turned on. The first situation is that only one consuming device can be activated when *an* appropriate optical wavelength band being transmitted through the fiber. That is by transmitting only one wavelength. The second situation is that a plurality of power consuming device can be activated when *multiple* optical wavelength *bands are being transmitted* ***simultaneously*** through the fiber optic line. Indeed, that is exactly what Endo teaches. As disclosed in col. 3, lines 25-55 of Endo, the electric appliance 2 which corresponds to the claimed "a power consuming device" can be activated when only one wavelength band is transmitted through the fiber 40. Endo in col. 5 further clearly disclosed that a plurality of electric appliances (2-1, 2-2, 2-3)which correspond to the claimed "the power consuming devices" can be activated when *multiple* optical wavelength *bands* ($\lambda_1, \lambda_2, \lambda_3$) are transmitted through the fiber 40. Therefore, Endo does exactly teach what was disclosed in the specification. In fact, even the particular way multiple optical wavelength bands are being transmitted through the fiber is exactly the same as Endo. As disclosed on page 3, lines 12-18 of the specification, in the transmission of *multiple* optical wavelength *bands* is accomplished by separately generating the *multiple* optical wavelength *bands* and then using optical coupler to combine them for transmission through the fiber optic line and using filters to select the narrower wavelength bands. Endo in Fig. 4 and col. 5 clearly disclosed the *multiple* wavelength *bands* ($\lambda_1, \lambda_2, \lambda_3$) were generated separately by 20-1, 20-2, and 20-3 and then combined together by an optical coupler 11 for transmission over a single fiber line 40, after transmitted the *multiple bands* via the fiber, the *multiple* wavelength *bands* ($\lambda_1, \lambda_2, \lambda_3$) were filtered out by optical filters (12-1, 12-2, 12-3). Consequently, if Appellant considers the transmission of *multiple* wavelength *bands* through the

fiber optic line as "**singly** through the fiber optic line", then, Endo which teaches the exactly same as disclosed by the Appellant, the transmission of *multiple* wavelength *band* ($\lambda_1, \lambda_2, \lambda_3$) through the fiber optic line 40 of Endo can also be definitely considered as "**singly** through the fiber optic line". Furthermore, the optical signal switches (20-1, 20-2, 20-3) are manual switches. Certainly, the manual switches of Endo can activated one by one. That is, the system shown in Fig. 4 of Endo is inherently capable of transmitting either one wavelength (for example, λ_1), two wavelengths (for example, λ_1, λ_2) or three wavelengths (for example, $\lambda_1, \lambda_2, \lambda_3$) by simply turning on one manual switch, two manual switches or three manual switches. The express, implicit, and inherent disclosures of prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness. In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed, Cir. 1995). The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA1977).

Appellant argued that Endo doe not use the electrical power generated by the light transmitted through the optical fiber 40 to power the devices. In this respect Appellant is correct. However, claims 25 does **not** require the power generated by the light transmitted through the optical fiber 40 to power the devices. That is, claim does not specific require the power that powers the consuming device is the power light energy from the optical fiber. Claim 25 only requires "each of control modules being operative to select the respective power consuming device for supplying electrical power thereto in response to one of multiple optical wavelength bands transmitted through the fiber optical line, each of optical wavelength bands causing one of

the control modules to select the respective power consuming device for supplying electrical power thereto". Endo (in Fig. 4 for example) clearly teaches each of control modules (30-1, 30-2, 30-3) being operative to select the respective power consuming device (2-1, 2-2, 2-3) for supplying electrical power thereto in response to one of multiple optical wavelength bands transmitted through the fiber optical line (that is, in response to one of multiple optical wavelength bands ($\lambda_1, \lambda_2, \lambda_3$), for example, in response λ_1, the control module (30-1) is operated to select power consuming device (2-1) for supplying electrical power thereto (that is, when the control module 2-1 is on, power is being supply to power consuming device 2-1)). Therefore, each of optical wavelength bands ($\lambda_1, \lambda_2, \lambda_3$) of Endo causing one of the control modules (30-1, 30-2, 30-3) to select the respective power consuming device (2-1, 2-2, 2-3)for supplying electrical power thereto

Appellant argued that Endo disclosed the multiple optical wavelengths bands are **simultaneously** transmitted the optical fiber line, and therefore does not anticipate the invention recited in claim 25. As explained above, so does the Appellant. As disclosed by page 3 lines 5-20 and page 6, line 1-6 of the specification, in the multiple wavelength bands situation, the wavelength bands as disclosed by Appellant are simultaneously transmitted.

Appellant further argues that Endo's system requires: 1) an optical fiber 40, 2) an electrical power supply line 50, and 3) multiple optical fibers extending to each of multiple optical filters 12-1, 12-2, and 12-3, however, claims 25 and 30 recites a fiber optic line for transmitting multiple optical wavelength bands singly through the fiber optic line, and Endo clearly describes a fiber optic line 40 that transmits multiple optical wavelength bands λ_1, λ_2, and λ_3 singly through the fiber line.

Appellant further argues Endo does not teach the use of tunable lasers. Endo teaches a plurality of light-emitting elements (col. 6, lines 45-52) that are disposed near one end of the optical fiber in such a way that an optical signal Sp having a specific wavelength emitted from the light-emitting elements can be introduced to the fiber (col. 6, lines 14-22), and it is well known in the field of optical communication systems to use lasers as light emitting elements for transmitting data signals optically.

Appellant further argues that Endo does not describe supplying electrical power to any data storage device, or supplying electric power to selected ones of multiple data storage devices, or supplying electric power to devices have programmed functions. However, Endo teaches an electrical appliance includes various electric loads such as motors, solenoid, air-conditioning heater, etc (col. 2, lines 31-38). Accordingly, if the electrical appliance is an air-conditioning heater, as it is suggested by Endo, such device can have a data storage device for storing different instruction and commands that can be given to the heater by an operator, or such device can have a processor with programmed functions to provide certain commands and control for operation of such device. Accordingly, electrical appliances such as the one disclosed by Endo can have electronic circuitries to store data, or they can be provided with installed programs to perform specific functions.

Appellant further argues Endo does not describe selectively supplying electrical power to multiple well tools, and Endo does not describe extending the fiber optic line into a subterranean well. In response to applicant's argument that Endo does not describe selectively supplying electrical power to multiple well tools, and Endo does not describe extending the fiber optic line into a subterranean well, a recitation of the intended use of the claimed invention must

result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Appellant further argues Endo does not disclose each of the control modules includes a WDM drop interconnected between the fiber optic line and the respective well tools. Endo discloses a light divider 12 that can function as a WDM drop, because it receives the multiplexed signal from fiber 40 and divides or separates the multiplexed signal into different wavelengths (col. 5, lines 18-24) that are further transmitted to respective switching units for powering the respective electric appliances (col. 5, lines 24-31).

Appellant further argues Endo does not disclose multiple optical couplers, each of which is interconnected to the fiber optic line. Endo describe the use of a coupler, or a divider 12 that is connected at one end to the fiber 40, and at the other end to respective optical filters 12-1, 12-2, 12-3, and to the fiber lines 40′-1, 40′-2, 40′-3 (col. 5, lines 18-24). Examiner believes that an optical divider 12 that is comprised of optical filters 12-1, 12-2, and 12-3 can function as a coupler to conduct the light from the fiber 40 to the respective fibers 40′-1, 40′-2, 40′-3.

Appellant also argues that Pitt reference does not describe supplying electrical power to selected ones of multiple power consuming devices, and instead Pitt describes supplying electrical power to a single power consuming device. However, Pitt clearly describes supplying electrical power to selected ones of multiple power consuming devices (col. 1, lines 52-55).

Appellant further argues that the multiple lasers used in the system of Pitt do not transmit multiple optical wavelength bands. Pitt describes the use of a plurality of laser diodes (232, fig. 8) in an optical power generation station (230, fig. 8), wherein each laser has an optical output with a wavelength of the order of 0.70 to 1.7 μm (col. 8, lines 45-57). Accordingly, each laser 232 can provide an output signal different from the output signal of other lasers. For example first laser 232 can generate an output wavelength of 0.70 μm, and the second laser 232 can generate an output wavelength of 0.80 μm, and so forth. Therefore, examiner believes Pitt discloses multiple lasers 232 that can transmit multiple optical wavelength bands.

Appellant further argues that Davis does not teach the transmission of multiple optical wavelength bands to select from among multiple data storage devices for supplying electrical power thereto, and Davis does not teach the transmission of data through a fiber optic line. Davis teaches a transmission and retrieval system (col. 1, lines 10-15 and fig. 1), wherein data storage devices (22, fig. 1) derive their operating power from the combinational signal transmitted by a data link means (col. 2, lines 35-45, 60-64). Although, Davis does not disclose the transmission of multiple optical wavelength bands through a fiber optic line, Davis teaches a data storage device can get power from a combinational signal that is transmitted by a data link.

Appellant further argues Tymes does not select from among multiple power consuming devices at all. However, Tymes is used by the examiner to show the teaching of supplying power to a microprocessor, or a device having a programmed function. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Mohammad Reza Sedighian
Examiner
Art Unit 2633

MRS
April 19, 2004

Conferees
Jason Chan (SPE)
Leslie Pascal (Primary Examiner)

JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

LESLIE PASCAL
PRIMARY EXAMINER